Exhibit P

FILE WRAPPER FOR PROVISIONAL U.S. APPLICATION

NO: **60/244,356**

INVENTOR: HARRI JOKINEN
                   SARI KORPELA
                   JUSSI NUMMINEN
                   ANTTI TOSKALA

FILING DATE: OCTOBER 30, 2000

TITLE: METHOD FOR RECEIVING DYNAMIC PRECONFIGURATION
                   DATA FROM NETWORK

ˑRELATED U.S. APPLICATION DATA:

            USSN 10/004,529 FILED OCTOBER 23, 2001
            US PATENT 6,788,959

            PROVISIONAL APPLICATION NO. 60/244,356
            FILED OCTOBER 30, 2000   [CAPTIONED FILE]

ˑThe related U.S. application data is drawn from the USPTO's public website and is not to be construed as a
complete family of applications. Complete family information is available from the USPTO under 37 CFR 1.14.

File History Prepared: 10/22/2004

Contents	Date
1. Application	10-30-2000
Miscellaneous Papers	

2

Practitioner's Docket No. 955-003.044   *PATENT*

Preliminary Classification:

  Proposed Class:

  Subclass:

NOTE: *"All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example 'Proposed Class 2, subclass 129.'" M.P.E.P., § 601, 7th ed.*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Harri Jokinen, Sari Korpela, Jussi Numminen and

For: Method for Receiving Dynamic Preconfiguration   Antti Toskala
Data from Network

Box Provisional Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

COVER SHEET FOR FILING PROVISIONAL APPLICATION
(37 C.F.R. § 1.51(c)(1))

WARNING: *"A provisional application must also include the cover sheet required by § 1.51(c)(1) or a cover letter identifying the application as a provisional application. Otherwise , the application will be treated as an application filed under paragraph (b) [nonprovisional application] of this section." 37 C.F.R. § 1.53(c)(1). See also M.P.E.P. § 201.04(b), 6th ed., rev. 3.*

NOTE: *"A complete provisional application does not require claims since no examination on the merits will be given to a provisional application. However, provisional applications may be filed with one or more claims as part of the application. Nevertheless, no additional claim fee or multiple dependent claims fee will be required in a provisional application." Notice of December 5, 1994, 59 Fed. Reg. 63,951, at 63,953.*

"Any claim filed with a provisional application will, of course, be considered part of the original provisional application disclosure." Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,209.

NOTE: *"A provisional application is not entitled to the right of priority under 35 U.S.C. 119 or 365(a) or § 1.55, or to the benefit of an earlier filing date under 35 U.S.C. 120, 121 or 365(c) or § 1.78 of any other application. No claim for priority under § 1.78(a)(3) may be made in a design application based on a provisional application. No request under § 1.293 for a statutory invention registration may be filed in a provisional application. The requirements of §§ 1.821 through 1.825 regarding application disclosures containing nucleotide and/or amino acid sequences are not mandatory for provisional applications." 37 C.F.R. § 1.53(c)(3).*

CERTIFICATION UNDER 37 C.F.R. § 1.10*
(Express Mail label number is mandatory.) (Express Mail certification is optional.)

I hereby certify that this correspondence and the documents referred to as attached therein are being deposited with the United States Postal Service on __Oct. 30, 2000__ (date), in an envelope as "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10, Mailing Label Number __EL 628638752__ addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Ellen. LaPak
(type or print name of person mailing paper)

Signature of person mailing paper

WARNING: *Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.*

***WARNING:** Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).*
"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

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NOTE: "No information disclosure statement may be filed in a provisional application." 37 C.F.R. § 1.51(d). "Any information disclosure statements filed in a provisional application would either be returned or disposed of at the convenience of the Office." Notice of December 5, 1994, 59 Fed. Reg. 63,591, at 63,594.

NOTE: "No amendment other than to make the provisional application comply with the patent statute and all applicable regulations may be made to the provisional application after the filing date of the provisional application." 37 C.F.R. § 1.53(c).

WARNING: A provisional application may be abandoned by operation of 35 U.S.C. § 111(b)(5) on a Saturday, Sunday, or Federal holiday within the District of Columbia, in which case, a nonprovisional application claiming benefit of the provisional application under 35 U.S.C. § 119(e) must be filed no later than the preceding day that is not a Saturday, Sunday, or Federal holiday within the District of Columbia. Notice of April 14, 1995, 60 Fed. Reg. 20,195 at 20,202.

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 C.F.R. § 1.51(c)(1)(i).

1. The following comprises the information required by 37 C.F.R. § 1.51(c)(1):

2. The name(s) of the inventor(s) is/are (37 C.F.R. § 1.51(c)(1)(ii)):

NOTE: "If the correct inventor or inventors are not named on filing a provisional application without a cover sheet under § 1.15(c)(1), the later submission of a cover sheet under § 1.15(c)(1) during the pendency of the application will act to correct the earlier identification of inventorship." 37 C.F.R. § 1.48(f)(2).

NOTE: "The naming of inventors for obtaining a filing date for a provisional application is the same as for other applications. A provisional application filed with the inventors identified as 'Jones et al.' will not be accorded a filing date earlier than the date upon which the name of each inventor is supplied unless a petition with the fee set forth in § 1.17(i) is filed which sets forth the reasons the delay in supplying the names should be excused. Administrative oversight is an acceptable reason. It should be noted that for a 35 U.S.C. 111(a) application to be entitled to claim the benefit of the filing date of a provisional application the 35 U.S.C. 111(a)[,] application must have at least one inventor in common with the provisional application." Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,209.

The term "invention" is typically used to refer to subject matter which applicant is claiming in his/her application. Because claims are not required in a provisional application, it would not be appropriate to reference joint inventors as those who have made a contribution to the "invention" disclosed in the provisional application. If the "invention" has not been determined in the provisional application because no claims have been presented, then the name(s) of those person(s) who have made a contribution to the subject matter disclosed in the provisional application should be submitted. Section 1.45(c) states that "if multiple inventors are named in a provisional application, each named inventor must have made a contribution, individually or jointly, to the subject matter disclosed in the provisional application." All that § 1.45(c) requires is that if someone is named as an inventor, that person must have made a contribution to the subject matter disclosed in the provisional application. When applicant has determined what the invention is by the filing of the 35 U.S.C. 111(a) application, that is the time when the correct inventors must be named. The 35 U.S.C. 111a) application must have an inventor in common with the provisional application in order for the 35 U.S.C. 111(a) application to be entitled to claim the benefit of the provisional application under 35 U.S.C. 119(e). Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,208.

See 37 C.F.R. § 1.53.

1.	Harri		Jokinen
	GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST) NAME
2.	Sari		Korpela
	GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST) NAME
3.	Jussi		Numminen
	GIVEN NAME	MIDDLE INITIAL OR NAME	FAMILY (OR LAST) NAME

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4. Antti   Toskala

3. Residence address(es) of the inventor(s), as numbered above (37 C.F.R. § 1.51(c)(1)(iii)):

   1. _Vahaiidentie 450, 25370 Hiisi, Finland_____

   2. _Bredankuja 7 G 25, 02700 Kauniainen, Finland_____

   3. _Liinahaankatu 26 as 11, 20320 Turku, Finland_____
   4. Katajaharjuntie 2-4 C 48, 00200 Helsinki, Finland
4. The title of the invention is (37 C.F.R. § 1.51(c)(1)(iv)):

   _Method for Receiving Dynamic Preconfiguration Data___

   _from Network_____

5. The name, registration, customer and telephone numbers of the practitioner *(if applicable)* is (37 C.F.R. § 1.51(c)(1)(v)):

   Name of practitioner: __Francis J. Maguire_____

   Reg. No. _____31,391_____ Tel. (203) _261-1234_____

   Customer No. __004955_____

   (complete the following, if applicable)

   ☐ A power of attorney accompanies this cover sheet.

6. The docket number used to identify this application is (37 C.F.R. § 1.51(c)(1)(vi)):

   Docket No.: _944-003.044_____

7. The correspondence address for this application is (37 C.F.R. § 1.51(c)(1)(vii)):

   _Francis J. Maguire_____

   _WARE, FRESSOLA, VAN DER SLUYS & ADOLPHSON LLP_____
   755 Main Street, PO Box 224, Monroe CT   06468
8. Statement as to whether invention was made by an agency of the U.S. Government or under contract with an agency of the U.S. Government.
   (37 C.F.R. § 1.51(c)(1)(viii))

   This invention was made by an agency of the United States Government, or under contract with an agency of the United States Government.

   ☒ No.

   ☐ Yes.
   The name of the U.S. Government agency and the Government contract number are: _____

   _____

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9. Identification of documents accompanying this cover sheet:

    A. Documents required by 37 C.F.R. §§ 1.51(c)(2)–(3):

        Specification: No. of pages _5_

        Drawings: No. of sheets _3_

    B. Additional documents:

        ☐ Claims: No. of claims _____

Note: See 37 C.F.R. § 1.51.

        ☐ Power of attorney

        ☐ Small entity statement

        ☐ Assignment

        ☐ Other

NOTE: Provisional applications may be filed in a language other than English as set forth in existing § 1.52(d). However, an English language translation is necessary for security screening purposes. Therefore, the PTO will require the English language translation and payment of the fee mandated in § 1.52(d) in the provisional application. Failure to timely submit the translation in response to a PTO requirement will result in the abandonment of the provisional application. If a 35 U.S.C. 111(a) application is filed without providing the English language translation in the provisional application, the English language translation will be required to be supplied in every 35 U.S.C. 111(a) application claiming priority of the non-English language provisional application. Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,209.

10. Fee

    The filing fee for this provisional application, as set in 37 C.F.R. § 1.16(k), is $150.00, for other than a small entity, and $75.00, for a small entity.

        ☐ Applicant is a small entity.

NOTE: "A . . . statement in compliance with existing § 1.27 is required to be filed in each provisional application in which it is desired to pay reduced fees." Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,197.

11. Small entity statement

        ☐ The statement(s) that this is a filing by a small entity under 37 C.F.R. §§ 1.9 and 1.27 is(are) attached.

12. Fee payment

        ☒ Fee payment in the amount of $ _150.00_ is being made at this time.

        ☐ No filing fee is to be paid at this time. (This and the surcharge required by 37 C.F.R. 1.16(l) can be paid subsequently).

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13. Method of fee payment

☒ Check in the amount of $ _150.00_

☐ Charge Account No. _____, in the amount of $ _____

A duplicate of this Cover Sheet is attached.

Date: _____

Tel.: (   )

Date: _30 Oct '00_

Reg. No.:   31,391

Tel.: (203) 261-1234

Customer No.:   004955

_____

Signature of submitter

OR

Francis J. Maguire

Signature of practitioner

Francis J. Maguire
(type or print name of practitioner)

WARE, FRESSOLA, VAN DER SLUYS &
P.O. Address   ADOLPHSON LLP

755 Main Street, PO Box 224
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Title of the invention

A method for receiving dynamic preconfiguration data from network

Inventors

Harri Jokinen,	Address:	Vähähiidentie 450, 25370 HIISI, FINLAND
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1. Field and background of the invention

The invention relates to the field of telecommunication and sending info from network to MS concerning the channel configuration during handover and possibly cell re-selection from one system to another, e.g. GSM to WCDMA.

2. A summary of the invention

The invention deals a situation where the network operator utilises their own "dynamic preconfigurations" (defined by an operator) and where the network sends those preconfiguration parameters to MS on UMTS BCCH. If these "dynamic preconfigurations" are used in the network, preconfiguration parametrs are sent on each UMTS cell's BCCH channel.

Before the actual handover from GSM to WCDMA, the MS can in IDLE mode (or, in general, when discontinuous reception is applied) receive between the paging receptions the preconfiguration parameters from UMTS BCCH so the actual handover/cell re-selection can happen more rapidly. Sometimes handover delay would be unacceptable long without the usage of the preconfigurations One possiblility could be (if allowed by standard) that some of the paging receptions can be neglected and preconfigurations can be received instead. In this case, however, the regular loss of paging receptions is to be avoided.

This invention relates also to the case when MS receives preconfigurations when camped on the UMTS cell before making handover/reselection to GSM cell. In this case the preconfiguration parameters are received before the handover/reselection to GSM.

The preconfigurations mentioned in the standard make the handover faster and decrease the signalling. The dynamic preconfiguratons bring additional flexibility those preconfigurations and could make the network more optimal. When a handover is made from GSM to UMTS, a channel preconfiguration is used which is more suitable to the current load situation in a cell and current spreading codes in use etc.

This invention also addressed the network operation in case both "hardcoded" and dynamic preconfigurations are possible and there is uncertainty if MS has been able to read the dynamic preconfigurations prior handover

It should be noted that terms UMTS BCCH and UMTS BCH represent the same channel in UMTS. The term BCCH is used to point to the logical channel while the term BCH is used to point to the actual transport channel being carried on the Primary CCPCH, desribed in 3GPP TS 25.211, v 3.4.0).

3. Describe the problem which the invention overcomes

To make GSM -> WCDMA handover/cell re-selection fast enough, information has to be transferred from network to MS to inform the channel preconfiguration parameters. In a case when there are additional (in addition to those to be defined in standards) preconfiguration parameters defined by some operator some way is needed to transfer those additional preconfiguration parameters to MS. The problem is that GSM

BCCH capacity is limited and would not be suitable for this purpose and sending transmitting additional info on a dedicated channel would require too much time.

Another problem is to keep the MS power consumption as low as possible.

4. How was the problem solved earlier?

It is known (3GPP 25.302, v. 3.60, chapter 7) that there are certain channel transform format combinations (TCFC) specified in standard which can be supported by the MS (depending on the MS capability). There is also proposal from Vodafone (R2-002015) which presents that additional preconfiguration parameters can be sent from network to MS but there is not any information how this could be done in a way which is fast enough and reliable for the handover/cell reselection purposes and a way which is reasonable from the terminal power consumption point of view.
Also there is no solution shown so that ping-pong (handover/cell reselection back and forth from system to another) in inter-RAT(Radio Access Technologies) cell reselection is avoided.

5. How does the invention improve earlier solutions? Advantages and disadvantages of the invention?

- We can avoid complex double cell reselection criteria based on some priorisation depending on whether dynamic preconfiguration parameters are available or not. Those complex cell re-selection rules both in GSM specifications and UMTS specifications (GSM 05.08 and 3GPP TS 25.304) are required to make the concept to work properly and to avoid ping pong between two Radio Access Technologies (RATs).

- -MS power consumption can be decreased

-The Network can also use both dynamic and hardcoded preconfigurations with the BS behaviour principles and contraints set for the dynamic preconfigurations.

6. Brief description of the drawings (Please enclose drawings and figures of the invention on a separate document)

Figures for "method 1" and "method 2" describe 2 ways to implement the present invention. The receiver figure shows a block diagram of a receiver device implementing the invention.

7. A more detailed description of the invention (if known at the moment)

These preconfiguration parameters can mean for example a situation where there are e.g. 8 default channel preconfiguration parameters (defined by standard) so that nework shall inform a MS the preconfiguration used by 3 bits by using UMTS BCCH. In addition to those default parameters there are then e.g. 4 additional preconfiguration parameters defined by the operator which is to be signalled on UMTS BCCH. Preconfiguration parameters can be parameters like transport block size, transport block set size, spreading factor, used CRC, TTI (tranmission time interval), etc.

Method 1

According to the method 1 MS checks periodically (based on the $T_{attempt}$ as described below) whether preconfigurations are available in UMTS BCCH until UMTS BCCH can de decoded and preconfigurations can be received. MS stops checking if it has noticed that preconfigurations are not available in the UMTS BCCH. This checking is done if the signal level (or signal quality) of the measured GSM signal (e.g. RSSI) is below or above (based on the measurement criterias for cell reselection defined between UMTS and GSM) a certain threshold (e.g. Q_{search}) The threshold used for inter-system re-selection is transmitted on a downlink channel (e.g. broadcast channel) where the MS is first located (e.g. in GSM BCCH if the handover/cell reselection is from GSM to UMTS). By that way the MS has a better information that UMTS network should be available.

Based on this information (available or not; after the MS has decoded the UMTS broadcast channel) the MS knows whether the network uses the dynamic preconfiguration (This is possible because all cells transmit preconfigurations if they are applied in the network).

When the MS has attempted to read preconfigurations from UMTS BCCH but it did not succeeed e.g. due to poor UMTS coverage (indicated by CRC check) and thereby poor UMTS signal quality, the MS does not try again until a time $T_{attempt}$ has expired. The timer $T_{attempt}$ is used in order to avoid the MS to attempt to decode UMTS BCCH all the time. (These attempts would interfer paging reception in GSM and they would also result in increased IDLE mode activity).

Method 2

One way to implement the invention is to use a bit on GSM BCCH indicating that WCDMA network uses the dynamic preconfigurations. In this case, before the actual handover from GSM to WCDMA the MS can in IDLE mode receive (between the paging receptions) the preconfiguration parameters from UMTS BCCH so the actual handover/cell selection can happen more rapidly. In this case MS do not have to try to decode UMTS BCCH if the bit indicates that the preconfigurations are not available.

Receiver-figure

This figure shows the reception blocks (transmission blocks are omitted for the clarify) of the device relevant for the invention. The device includes an antenna, RX block for reception of the signal, a decoder for decoding the received signal. Signal level (e.g. RSSI) and CRC information are provided to control/timer block which the controls the reception blocks of the device to receive the preconfigurations (as described in method figures 1 and 2)

Method 3. (Network behavior in GSM-UTRAN) handover when dynamic peconfigurations are active)

When the UMTS BCCH contains the dynamic preconfigurations, the network is faced to deal with two cases for handover, either the MS has had possibility to read preconfigurations or then there has not been such a possibility. The latter case is likely to happen when a call has been initiated (speech or CS data) outside WCDMA coverage and then upon moving to WCDMA coverage there is need to make handover from GSM to WCDMA. In this case network face the uncertainty which set of configurations to use as MS ca not necessary read the dynamic data from the UMTS BCCH. There are also other reasons why this may occur e.g. due bad reception quality of the UMTS BCCH etc.

In this case the network should configure the dynamic preconfiguration as follows:
- The TFCI code words of the dynamic preconfigurations shall be different than the hardcoded preconfigurations. This allows the network to identify if the MS has detected the dynamic preconfigurations when the MS starts the uplink transmission (which contains the TFCI as there is likely to be more than 1 data rate together with the service and DCCH). The DPCCH structure needs to be the same for both configurations (hardcoded and dynamic), the SF is fixed to 256 in any case for the uplink DPCCH.
- In the downlink direction the network should use such a dynamic preconfiguration that the parameters like spreading factor as well as the DPCCH structure would be the same than with the hardcoded one, which ensures that things like power control etc. are handled without a problem in all cases. If the network has selected the dynamic preconfiguration and notices that MS is using hardcoded instead, network should then replace the downlink DPDCH part with the DPDCH as defined for the hardcoded case. The identification can be done from the set of TFCI code words MS sends in the uplink direction. If TFCI code word for the hardcoded one is detected, then downlink DPDCH should be adjusted accordingly (assuming now DPCCH parameters were the same for both configurations, otherwise DPCCH parameters need to be adjusted as well)
- In the downlink direction if the same spreading factor is used there are some possibilities for deviations for the DPCCH structure as e.g. the power control command position is always fixed thus and can be detected in all cases when spreading factor is known. If the number of pilot bits in DPCCH field does not match then there is some degradation in the channel estimation process.

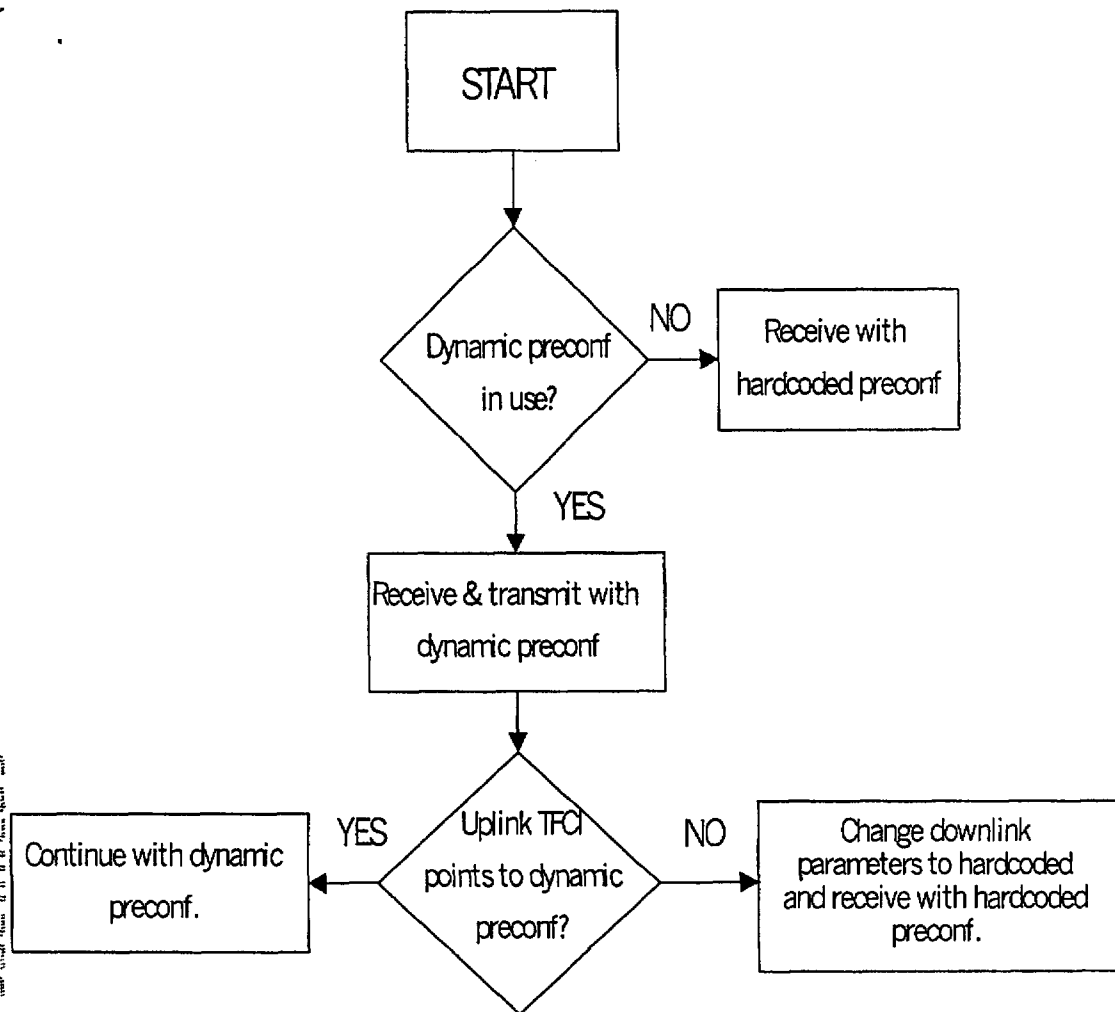This is illustrated in the Figure 1. below as well:

Figure 1. Network operation when both dynamic and hardcoded preconfigurations are in-use.

From the MS point of view the procedure can be for example as follows:

- MS knows from its data rate (transmitted/received) which is the corresponding hardcoded preconfiguration (for reception and transmission) as given in the standard and stored in the MS memory or e.g. SIM card. Once getting the handover command in GSM side to move to UMTS, the handover command contains index pointing to either to a dynamic preconfiguration or then to hardcoded preconfiguration.
- If the MS has been able to read the relevant information blocks on the UMTS BCCH some point of time, then has the dynamic preconfiguration and uses that when starting the dedicated channel transmission after the handover procedure otherwise has been completed including synchronisation etc. If the MS had not been able to acquire suitable dynamic preconfiguration, it then automatically uses the hardcoded preconfiguration available in the MS (MS memory or SIM card etc).
- Note that uplink and downlink data rates may differ and thus uplink and downlink need to be observed separately by the terminal.

8. Explain, how the invention is/can be implemented. Which would be the best mode of implementation?

In method 1, the implementation of the invention is about decoding the UMTS BCCH periodically based on the timer info and based on the information ~~wheter~~whether the decoding of UMTS BCCH was succesful (e.g. based on CRC) . In method 2, it is needed to decode the bit (optional) sent on GSM BCCH to detect the presence of preconfiguration information.

The decoding of the signal, as such, can be made by any known method. Also the implementation of the CRC (i.e. how many bits are used for CRC) is standard specific issue. RSSI can be determined by detecting the received RF signal level. This level information is then converted to digital form by A/D converter and then provided to control/timer block. The reception of UMTS BCCH is preferably done, as mentioned above, between the paging reception. It is assumed that the control/timer is aware of the

paging reception timing/interval info (this depends on the telecommunication standard in use) .The control block is then using the paging reception info and the timer $T_{attempt}$ to control the reception circuits of the device.

The implementation of method 3 is independent of whether methods 1 or 2 are chosen, as long as there are both dynamic and hardcoded preconfigurations in the system. In such a case the principles described for method 3 should be followed to avoid additional failures for the inter-system handover.
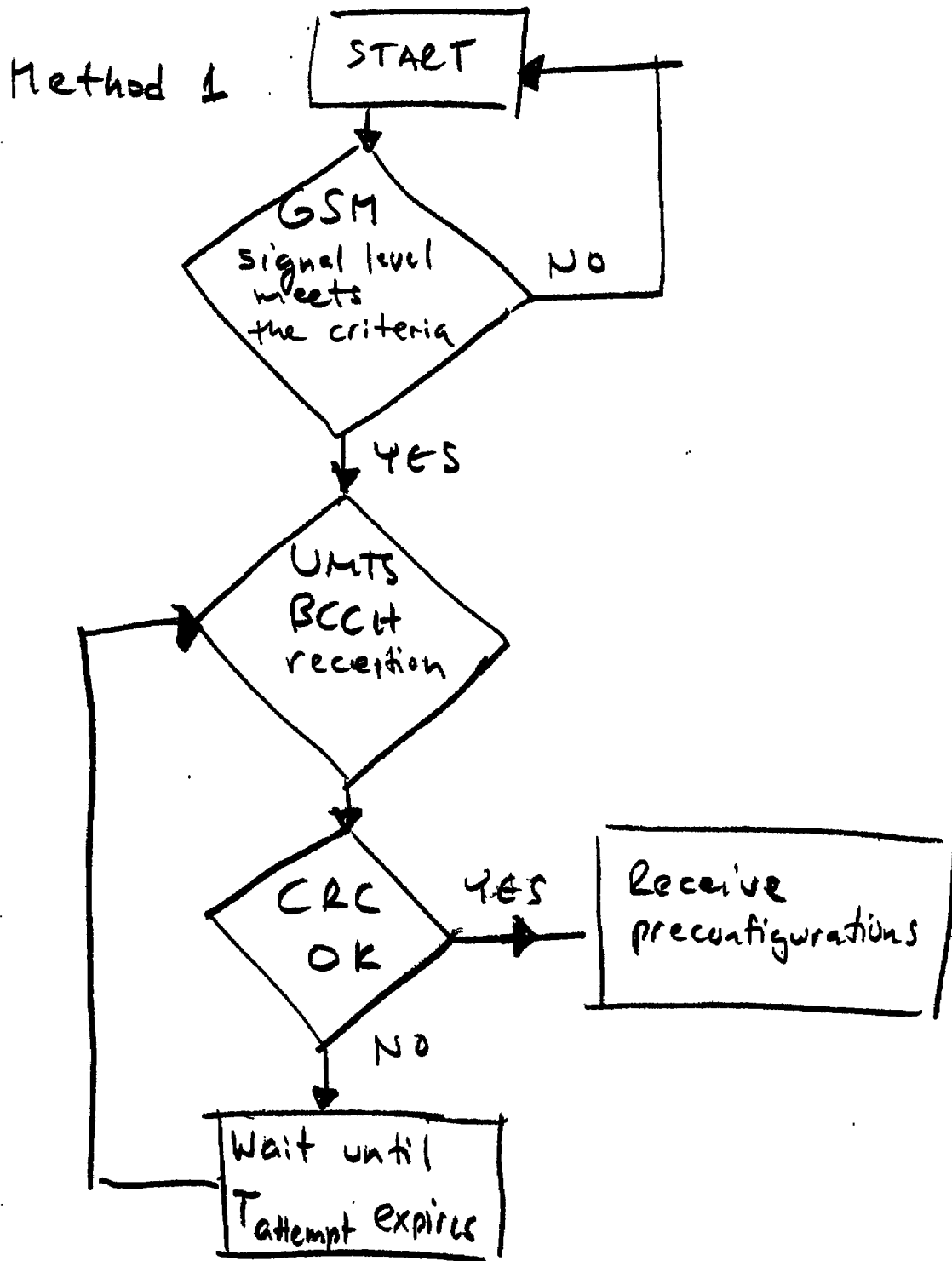
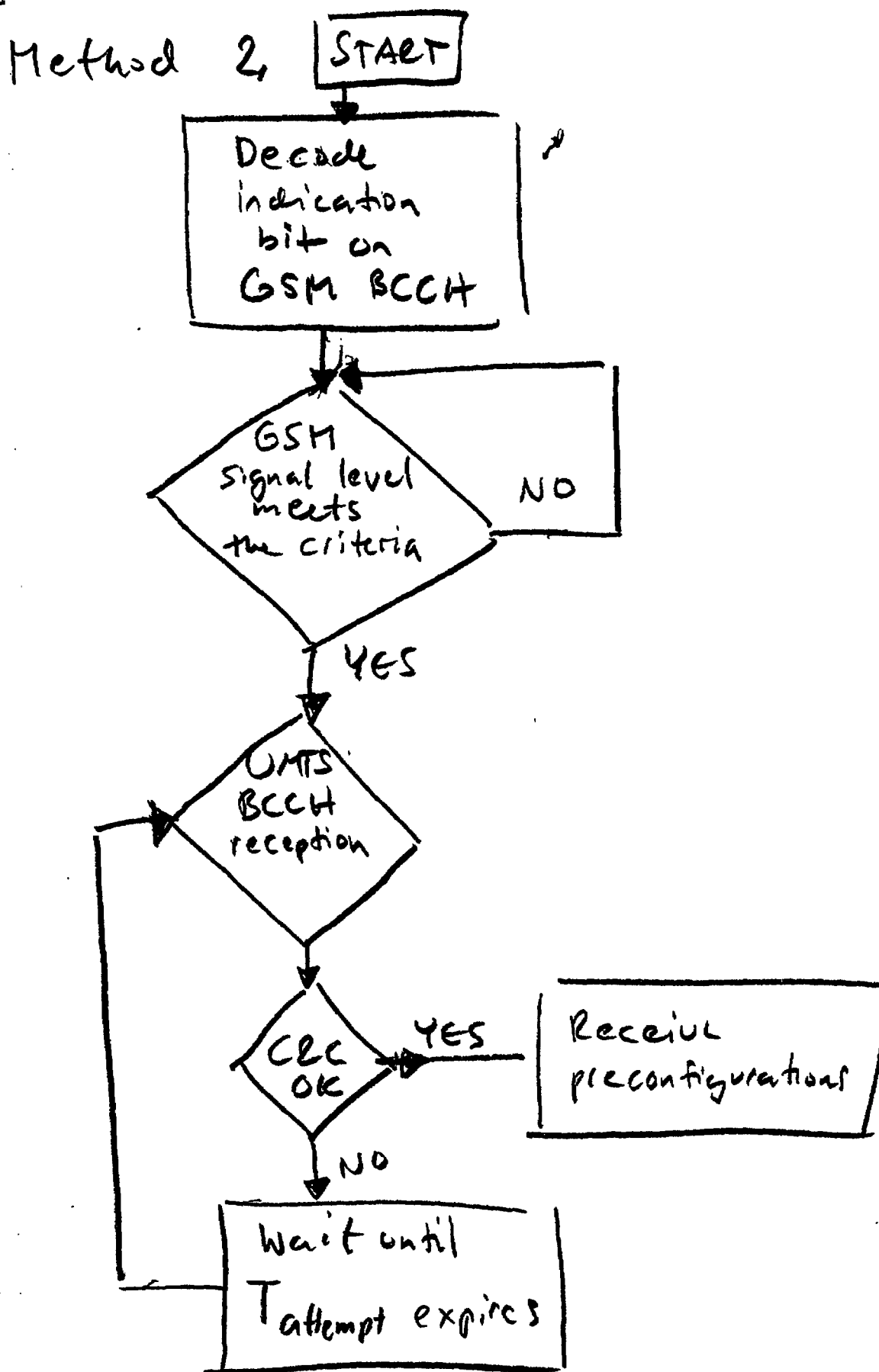## 9. Explain how we can recognise if a competitor is using the same product/feature?

Timer and the optional bit would be defined in standards. Preconfiguration decoding requirement has to be written into the standard as well.

From the actual network the use of dynamic preconfiguration can be seen from the UMTS BCCH structure, If it contains the dynamic preconfigurations then methods described are in use.

Also the restrictions for the dynamic preconfiguratin against hardcoded ones would have to be written in the standard and can thus be observed from the preconfiguration data transmitted on the UMTS BCCH.

Method 1

START

GSM signal level meets the criteria

NO

YES

UMTS BCCH reception

CRC OK

YES

Receive preconfigurations

NO

Wait until $T_{attempt}$ expires

Method 2,

Receiver